



Recent Weight Loss Approaches

Obesity and obesity-related diseases continue to be a major health problem in America. But can obesity be traced *solely* to putting too much food in our mouths? Intriguing recent studies hint at the wide spectrum of issues surrounding obesity including food additives, sleep duration, early protein consumption as well as family dynamics.

Prevalence of Childhood and Adult Obesity in the United States, 2011–2012

The prevalence of overweight and obesity in both our nation's youth and adults has not significantly changed since 2003. According to the National Health and Nutrition Examination Survey of 2011–2012, nearly 17% of 2–19 year olds and 35% of adults were obese.

Journal of the American Medical Association. 2014 Feb. 26;311(8):806-814 (Ogden CL et al.)

Food Additives May Have a Role in the Obesity Epidemic

A recent study performed in mice investigated the effects of two prominent emulsifiers [Carboxymethylcellulose (CMC) and polysorbate-80 (P80)]. These emulsifiers are commonly used to stabilize processed foods, but may also have an effect on the bacteria in our gut. Mice fed these emulsifiers had a significant disturbance in the diversity of the bacteria lining the gut. Chronic exposure to emulsifiers also led to a decrease in the thickness of the mucus that lines and protects the intestines, which resulted in greater gut permeability and inflammation. Furthermore, researchers observed that the mice fed an emulsifier had modest weight gain, an increase in fat mass, and ate more food overall. These results suggest that our widening use of CMC and P80 as emulsifiers, could be contributing to the increased incidence of obesity. Researchers acknowledged that an excess of calories over time is the primary cause for obesity, but this evidence suggests that our insatiable appetites may partly be influenced by food additives in our food supply.

Nature. 2015 Mar 5;519(7541):92-6 (Chassaing B et al.)

Early Protein Hypothesis: High Protein During Infancy May Increase Risk for Obesity

The early protein hypothesis suggests that feeding infants a diet high in protein in the first year of life may result in greater weight gain. To study this, researchers randomized healthy, formula-feeding infants to receive either high-protein or low-protein formula. Breastfed infants were used as a control group. Both formulas had the same energy density, but the low-protein formula provided 1.25 g protein/100 ml while the high-protein formula provided 2.05 g protein/100 ml. The original European Childhood Obesity Project in 2009 reported that infants who received the high-protein formula had significantly higher weight-for-age, weight-for-length, and BMI compared to the low protein formula and to breastfed infants from 6-24 months of age. This study followed the same infants into early childhood at ages 2.5 – 6. They found that the children fed the high-protein formula had a significantly higher BMI at age 6. Furthermore, the risk of obesity was 2.43 times higher in the high-protein group compared to the low-protein group. There was not a significant difference in weight or BMI between the low-protein group and breast-fed infants. This suggests that reducing the protein content of formula to more closely resemble that of breast milk (about 0.9% to 1.2% protein) leads to a lower BMI at age 6.

American Journal of Clinical Nutrition. 2014 May;99(5):1041-51 (Weber M et al.)



Sleep Duration Associated with BMI and Food Intake

The National Institute of Health (NIH) currently recommends 7–8 hours of sleep every night. In 2013, less than 21% of American adults met this recommendation, with 33% reporting sleeping less than 6 hours a night. This study collected data on over 14,900 participants of European descent and found that there was a significant association between sleep duration and BMI. Each additional hour of sleep was associated with a 0.16 reduction in BMI. Moreover, this effect was even stronger in men who had a 0.23 reduction in BMI for every additional hour of sleep. While researchers did not find a significant association between sleep duration and macronutrient intake, they did see a difference in types of fats consumed. Those who slept an additional hour ate significantly less saturated fat, but significantly more polyunsaturated fats (a healthy plant fat found in many plant oils). Evidence suggests that proper sleep may be an essential component of a healthy lifestyle.

American Journal of Clinical Nutrition. 2015 Jan;101(1):135-43 (Dashti HS et al.)

Dynamics of Family Meals Can Influence Risk of Childhood Obesity

Research suggests that sitting down for a family meal once a day leads to healthier habits, such as increased fruit and vegetable intake, and more mindful eating. One would think these healthy habits would have a protective effect against childhood obesity, but this is not always true. Therefore, Berge et al. analyzed whether there was an association between family dynamics during meals and childhood obesity. One hundred and twenty children and parents from low-income minority communities were included and their family meals were videotaped for eight days. Researchers found that in environments where there were positive interpersonal dynamics, such as group enjoyment, familial warmth, and parental positive reinforcement, the children had significantly lower risk of being overweight. Similarly, when there were positive dynamics related to food, such as parental positive reinforcement and food communication, there was reduced risk for childhood obesity. These findings illustrate the importance of working with families to promote positive dynamics during meal times.

Pediatrics. 2014 Nov;134(5):923-32 (Berge JM et al.)

Intergenerational Influences on Weight

Evidence is beginning to suggest that there may be an intergenerational component to obesity. Researchers took it one step further and analyzed whether an individual's weight status was affected by socioeconomic status across previous generations. Using data from the Panel Study of Income Dynamics (PSID), researchers examined whether there was an association between grandparents' exposure to chronic poverty and their grandchildren's body mass index (BMI). Data were collected on approximately 2,600 grandchildren. Results indicated that grandparents' chronic exposure to poverty was significantly associated with a higher BMI in their female grandchildren. Females who had a chronically poor grandparent had a faster BMI growth rate than females who did not have a chronically poor grandparent. This association remained significant even after adjusting for their parents' BMI, education, and exposure to poverty. Low socioeconomic status can negatively impact not just one generation, but three!

American Journal of Epidemiology. 2015 Feb 1;181(3):163-170 (Li M)